

What is claimed is:

1. An active noise control system comprising:

a noise detector which detects a noise within a duct;

5 an error detector which is provided in a downstream side of the noise propagating within said duct for said noise detector to detect noise within said duct;

10 a control sound source which is installed in the vicinity of said error detector to radiate a control sound having approximately the same sound pressure as of and an opposite phase to the noise within said duct;

15 an arithmetic circuit which inputs an noise signal of said noise detector and an error signal of said error detector, sets a transfer function so that the error signal of said error detector becomes small, multiplies the noise signal of said noise detector with said transfer function, and outputs an multiplied result to said control sound source as a control signal; and

20 a rectifying part which is provided in an upstream side of a fluid flowing within said duct for said noise detector and said error detector, and increases a coherence of the fluid between said noise detector and said error detector by rectifying the fluid within said duct.

2. An active noise control system according to claim 1, wherein said rectifying part includes a rectifying net and a rectifying grid which is an aggregation of capillaries.

5 3. An active noise control system according to claim 1, wherein said rectifying part includes at least one rectifying net and a rectifying grid having an opening ratio greater than of said rectifying net.

10 4. An active noise control system according to claim 3, wherein a plurality of said rectifying nets are provided and placed in the upstream side and the downstream side of the fluid flowing within said duct for said rectifying grid, respectively.

15 5. An active noise control system comprising:
a plurality of noise detectors which are provided in a condition of being proximate to each other to detect noise within a duct;

20 a plurality of error detectors which are provided in a condition of being proximate to each other in a downstream side of the noise propagating within said duct for said noise detector;

a first adder which adds noise signals of said noise

detectors;

a second adder which adds error signals of said error detectors;

a control sound source which is installed in the vicinity of
5 said error detectors to radiate a control sound having
approximately the same sound pressure as of and an opposite phase
to the noise within said duct; and

an arithmetic circuit which inputs an output signal of said
first adder and an output signal of said second adder, sets a
10 transfer function so that the output signal of said second adder
becomes small, multiplies the output signal of said first adder
with said transfer function, and outputs a multiplied result to
said control sound source as a control signal.

15 6. An active noise control system comprising:

a noise detector which is provided to each other to detect
noise within a duct;

a plurality of error detectors which are provided in a
condition of being proximate to each other in a downstream side
20 of the noise propagating within said duct for said noise
detector;

an adder which adds error signals of said error detectors;

a control sound source which is installed in the vicinity of

said error detectors to radiate a control sound having approximately the same sound pressure as of and an opposite phase to the noise within said duct; and

an arithmetic circuit which inputs an output signal of said
5 noise detector and an output signal of said adder, sets a transfer function so that the output signal of said adder becomes small, multiplies the output signal of said noise detector with said transfer function, and outputs a multiplied result to said control sound source as a control signal.

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7. An active noise control system comprising:

a plurality of noise detectors which are provided in a condition of being proximate to each other to detect noise within a duct;

15 an error detector which is provided in a downstream side of the noise propagating within said duct for said noise detectors;

an adder which adds noise signals of said noise detectors;

a control sound source which is installed in the vicinity of said error detector to radiate a control sound having
20 approximately the same sound pressure as of and an opposite phase to the noise within said duct; and

an arithmetic circuit which inputs an output signal of said adder and an output signal of said error detector, sets a

transfer function so that the output signal of said error detector becomes small, multiplies the output signal of said adder with said transfer function, and outputs a multiplied result to said control sound source as a control signal.

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8. An active noise control system according to claim 5, wherein said noise detectors are provided on a perpendicular plane to a propagating direction of a sound propagating within said duct.

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9. An active noise control system according to claim 7, wherein said noise detectors are provided on a perpendicular plane to a propagating direction of a sound propagating within said duct.

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10. An active noise control system according to claim 5, wherein said noise detectors are provided and an attachment position relating to the propagating direction of the sound within said duct is placed in an extent of approximately $1/4$ or less of a wavelength of the sound to be muffled.

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11. An active noise control system according to claim 7, wherein said noise detectors are provided and an attachment

position relating to the propagating direction of the sound within said duct is placed in an extent of approximately $1/4$ or less of a wavelength of the sound to be muffled.

5 12. An active noise control system according to claim 5, wherein said error detectors are provided on a perpendicular plane to a propagating direction of a sound propagating within said duct.

10 13. An active noise control system according to claim 6, wherein said error detectors are provided on a perpendicular plane to a propagating direction of a sound propagating within said duct.

15 14. An active noise control system according to claim 5, wherein said error detectors are provided and an attachment position relating to the propagating direction of the sound within said duct is placed in an extent of approximately $1/4$ or less of a wavelength of the sound to be muffled.

20 15. An active noise control system according to claim 6, wherein said error detectors are provided and an attachment position relating to the propagating direction of the sound

within said duct is placed in an extent of approximately $1/4$ or less of a wavelength of the sound to be muffled.

16. An active noise control system comprising:

5 a plurality of noise detectors which are provided in a condition of being proximate to each other to detect noise within a duct;

10 a plurality of error detectors which are provided in a condition of being proximate to each other in a downstream side of the noise propagating within said duct for said noise detector;

a first adder which adds noise signals of said noise detectors;

15 a second adder which adds error signals of said error detectors;

a control sound source which is installed in the vicinity of said error detectors to radiate a control sound having approximately the same sound pressure as of and an opposite phase to the noise within said duct;

20 an arithmetic circuit which inputs an output signal of said first adder and an output signal of said second adder, sets a transfer function so that the output signal of said second adder becomes small, multiplies the output signal of said first adder

with said transfer function, and outputs a multiplied result to
said control sound source as a control signal; and
a rectifying part provided in an upstream side of a fluid flowing
within said duct for said noise detectors and said error
5 detectors and increasing a coherence of the fluid between said
noise detectors and said error detectors.

17. An active noise control system comprising:

a noise detector which is provided in a condition of being
10 proximate to each other to detect noise within a duct;

a plurality of error detectors which are provided in a
condition of being proximate to each other in a downstream side
of the noise propagating within said duct for said noise
detector;

15 an adder which adds error signals of said error detectors;

a control sound source which is installed in the vicinity of
said error detectors to radiate a control sound having
approximately the same sound pressure as of and an opposite phase
to the noise within said duct;

20 an arithmetic circuit which inputs an output signal of said
noise detector and an output signal of said adder, sets a
transfer function so that the output signal of said adder becomes
small, multiplies the output signal of said noise detector with

said transfer function, and outputs a multiplied result to said control sound source as a control signal; and a rectifying part provided in an upstream side of a fluid flowing within said duct for said noise detector and said error detectors and increasing a coherence of the fluid between said noise detectors and said error detectors.

18. An active noise control system comprising:

a plurality of noise detectors which are provided in a condition of being proximate to each other to detect noise within a duct;

an error detector which is provided in a condition of being proximate to each other in a downstream side of the noise propagating within said duct for said noise detector;

an adder which adds noise signals of said noise detectors;

a control sound source which is installed in the vicinity of said error detector to radiate a control sound having approximately the same sound pressure as of and an opposite phase to the noise within said duct;

an arithmetic circuit which inputs an output signal of said adder and an output signal of said error detector, sets a transfer function so that the output signal of said error detector becomes small, multiplies the output signal of said

adder with said transfer function, and outputs a multiplied
result to said control sound source as a control signal; and
a rectifying part provided in an upstream side of a fluid flowing
within said duct for said noise detectors and said error
5 detectors and increasing a coherence of the fluid between said
noise detectors and said error detectors.

19. An active noise control system according to claim 16,
wherein said rectifying part includes a rectifying net and a
10 rectifying grid which is composed of capillaries.

20. An active noise control system according to claim 16,
wherein said rectifying part includes at least one rectifying net
and a rectifying grid having an opening ratio greater than of
15 said rectifying net.

21. An active noise control system according to claim 16,
wherein a plurality of said rectifying nets are provided and
placed in the upstream side and the downstream side of the fluid
20 flowing within said duct for said rectifying grid, respectively.

22. An active noise control system according to claim 17,
wherein said rectifying part includes a rectifying net and a

rectifying grid which is composed of capillaries.

23. An active noise control system according to claim 17,
wherein said rectifying part includes at least one rectifying net
5 and a rectifying grid having an opening ratio greater than of
said rectifying net.

24. An active noise control system according to claim 17,
wherein a plurality of said rectifying nets are provided and
10 placed in the upstream side and the downstream side of the fluid
flowing within said duct for said rectifying grid, respectively.

25. An active noise control system according to claim 18,
wherein said rectifying part includes a rectifying net and a
15 rectifying grid which is composed of capillaries.

26. An active noise control system according to claim 18,
wherein said rectifying part includes at least one rectifying net
and a rectifying grid having an opening ratio greater than of
20 said rectifying net.

27. An active noise control system according to claim 18,
wherein a plurality of said rectifying nets are provided and

placed in the upstream side and the downstream side of the fluid flowing within said duct for said rectifying grid, respectively.